

EPA's End-of-life and Sustainability Programs

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Agenda

- Why are electronics a waste issue?
- EPA's Programs

Why are electronics a waste issue?



- ↗ Electronics are a growing part of the waste stream, almost 2% MSW
- ↗ Short life-cycles means rapid obsolescence
- ↗ 2007: 234 million units estimated in storage
- ↗ Only 18% of e-waste was estimated recycled between 2006-07

Why are electronics a waste issue?



By Tim Townsend, University of Florida

- Toxic components can present hazards at EOL
- At least 36 different elements
 - All 8 RCRA metals
 - In all parts of the device
- Some are known toxins
- Other materials risks are not fully known

Why are electronics a waste issue?



- Improper end-of-life management
 - Increases
 - Risks from materials
 - Risk of information release
- Need for increased recycling options:
 - Illegal dumping
 - Inappropriate recycling
 - Burdens on local governments

Why are electronics a waste issue?



- ↗ Landfilled electronics contain recoverable materials
- ↗ Recycling 10,000 computers yields about:
 - » 140,000 Lbs. Plastics
 - » 120,000 Lbs. Iron
 - » 80,000 Lbs. Aluminum
 - » 40,000 Lbs. Lead

EPA's Programs

Plug-In to Cycling



↗ Partnership program to promote new recycling models

↗ Partners

- » OEMs
- » Service providers
- » Retailers
- » Local governments

Plug-in to eCycling

- In 2007 partners reused or recycled 47 million pounds of electronics
 - » Equals GHG reductions of 32,000 less cars on the road for a year
 - » 142 million pounds collected since 2003
- In 2008 the focus is cell phone recycling

Plug-In's Cell Phone Initiative



- Fewer than 20% of cell phones are recycled
- 100M are ready for recycling
- Cell phone initiative launched in January
- Goals:
 - » Educate people about recycling
 - » Increase awareness of existing programs
 - » Support collection events

Plug-in to eCycling

➤ Guidelines for Materials Management

- » Promotes the waste management hierarchy, i.e. reuse over disposal
- » Encourages due-diligence and audits of recyclers
- » Mentions EMS and EH&S for environmental and worker protection



Responsible Recycling Practices for Electronics Recyclers

- Standard for recycler performance based off of the Guidelines for Materials Management
- Adds additional requirements on:
 - » Materials that need special handling
 - » Export is addressed
 - » Security: facility and data
 - » Financial assurance
- Third-party group will:
 - » Run the program
 - » 'Certify' recyclers

Federal Electronics Challenge

- Challenge to federal agencies to improve electronics stewardship
- Applies across the entire lifecycle – purchase, use, end-of-life
- Requires agencies to purchase EPEAT products, and use Energy Star features
- Provides tools to support EOL management

Design for the Environment

➤ DfE is a pollution prevention program

» Reduce risk to people and the environment

» Partnership between government and industry

➤ Projects:

Lead-free solder

Wire and cable

Flame retardants in PCBs

Computer displays

Printed wire boards

➤ In 2006 15 DfE programs reduced chemicals of concern use by 183M pounds

Energy Star



- EPA/DOE program to label energy efficient products
- Promotes energy savings to reduce GHG emissions
- Products are across the home and office
- 65% of households have a high awareness of the Energy Star label.
- New standards are in development for many products

Legislation

➤ Federal

- » Legislation was proposed in 2007 session
- » Joint House/Senate Concept Paper 3/2008
- » Committee hearings on the topic

➤ State

- » 17 states have legislation
- » All but California are producer responsibility
- » Illinois e-waste legislation was signed last week

Electronics Regulations

- ↗ States may have rules that are more stringent than Federal regulations
 - » Disposal bans
 - Effected equipment varies from state to state
 - Effected generators vary from state to state
 - » Universal waste classification is used in some states
 - » Some states have take back requirements
- ↗ Local governments can also impose more stringent regulations

The CRT Rule

- Provides regulatory clarity to help increase CRT recycling
- Conditionally removes CRTs from hazardous waste requirements
- Currently main effect is on exports
 - » Requires notice & consent or receiving country for recycling
 - » Requires notice only for reuse
- States must adopt domestic management requirements independently

Product Stewardship

EPA's definition:

‘Product stewardship calls on those in the product life cycle—manufacturers, retailers, users, and disposers—to share responsibility for reducing the environmental impacts of products.’

- Goal: reduce product's environment impacts
- Involves all parties in the life-cycle
- Side benefit – reduces burdens on those not involved in the life-cycle
- Being applied electronics and other products:
 - » Paint
 - » Pharmaceuticals
 - » CFLs

Contact Information

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<http://www.epa.gov/reg5rcra/wptdiv/solidwaste/ecycling/index.htm>